Claims

1. A method of producing a sintered body of yttrium-aluminum garnet from a source compound for yttrium and a source compound for aluminum using aluminum nitride as a sintering aid.

2. The method of claim 1, wherein said source compound for yttrium comprises yttria and said source compound for aluminum comprises alumina.

3. The method of claim 1, wherein a molar ratio (Y/Al) of yttrium to aluminum is 0.59 to 0.62 contained in said source compound for yttrium and said source compound for aluminum.

4. The method of claim 1, wherein a molar ratio (Y/Al) of yttrium to aluminum is 0.59 to 0.62 contained in said source compound for yttrium, said source compound for aluminum and aluminum nitride.

5. The method of claim 1, wherein a molar ratio (Y/Al) of yttrium to aluminum is 0.61 to 0.63 contained in said source compound for yttrium and said source compound for aluminum, and wherein a molar ratio (Y/Al) of yttrium to aluminum is 0.59 to 0.62 contained in said source compound for yttrium, said source compound for aluminum and aluminum nitride.

6. The method of claim 1, wherein aluminum nitride is not substantially present in said sintered body of yttrium-aluminum garnet.

7. The method of claim 1, wherein said sintered body of yttrium-aluminum garnet comprises AlON phase.

8. The method of claim 1, comprising the step of sintering under a reducing atmosphere containing nitrogen in a ratio of 10 percent or higher and 60 percent or lower.

9. The method of claim 1, comprising the step of sintering under an atmosphere having a dew point of $-10$ ℃ or higher and $+10$ ℃ or lower.

10. The method of claim 1, further comprising the steps of:

dewaxing a shaped body comprising said source compound for yttrium, said source compound of aluminum and aluminum nitride at a temperature of 800 ℃ to 1300 ℃ to obtain a dewaxed body; and

sintering said dewaxed body to obtain a sintered body.

11. A sintered body of yttrium-aluminum garnet obtained by the method of claim 1.

12. A sintering aid used for producing a sintered body of yttrium-aluminum garnet from a source compound for yttrium and a source compound for aluminum, said sintering aid comprising aluminum nitride.